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PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Improvements in or relating to Router Planes

We, NEEDHAM & JACKSON LIMITED, a British Company of Wilford Street, Nottingham, and VICTOR ERNEST NEEDHAM, a British Subject, of 69 Gertrude Road, West

5 Bridgford, Nottingham, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

10 This invention relates to router planes and its object is to provide a router plane which is manually operated and provided with an electric motor driven rotary cutter, the motor being either permanently fixed in position or
15 the plane adapted so that a portable electric motor normally used for drilling and similar purposes can be fixed in position to drive the cutter.

According to this invention a router plane
20 comprises a base on which a motor is mounted or is fixed thereto, a rotary cutter on the motor spindle, a sole plate disposed under the base and having an opening therein in which the cutter is located, the sole plate being
25 attached to the base so that it can be adjusted relatively thereto to regulate the depth of cut. The sole plate may be made in two separate parts which are independently adjustable relatively to the base, one part being
30 disposed in front of the cutter and one behind. Adjustable lays are also preferably provided to control the depth and width of rebates cut with the plane. The sole plate may be constructed so that the leading end thereof
35 is adjustable independently of the rear end.

The invention will now be more particularly described with reference to the accompanying drawings in which:—

40 Fig. 1 is a side elevation,
Fig. 2 an end elevation and

Fig. 3 a plan of a router plane constructed according to this invention

Fig. 4 is a side elevation showing a divided sole plate and

Fig. 5 is a side elevation showing a further alternative form of sole plate. 45

Like numerals indicate like parts throughout the drawings.

In carrying out this invention the motor 1 for driving a rotary cutter 2 is mounted with its spindle vertical or substantially vertical on a base 3, the motor spindle projecting through the base 3. When the motor 1 is a portable drill type the base 3 is formed with an arm 4 thereon having a set screw 5 at its outer end to engage in well known manner with the rear end of the motor 1 to hold it in position on a seat on the base 3. The cutter 2 is secured to the motor spindle in any convenient manner and the cutter is a face cutter and comprises a boss 6 having a plurality of radially disposed removable cutters 7 secured therein. 50 55 60

Disposed below the base 3 is a sole plate 8 having an opening 8a therein in which the cutter 2 is located. The sole plate 8 is attached to the base 3 so that it can be adjusted towards or away from the base 3 for adjusting the depth of cut and also laterally thereof for a similar purpose. For this purpose the sole plate 8 is attached to the base 3 by a plurality of screws 9 which pass through slotted clearance holes in the base 3 and screw into holes in the sole plate 8 and the latter is held rigid when set in the required position by a plurality of set screws 10 in the base 3 which are screwed into engagement with the upper face of the sole plate 8. The sole plate 8 is set so that the cutting edges of the cutter blades 7 project the required distance below the under surface of the sole plate 8, according to the depth of cut required. The sole plate 8 is moved laterally of the cutter by one or more adjusting screws 11 mounted on the base 3 and engaging with a flange 12 on the upper side of the sole plate 8 and disposed along one edge thereof. 65 70 75 80 85

The sole plate 8 may be made in two parts, as shown in Fig. 4, one part 13 located in

front of the cutter 2 and one part 14 behind the cutter. Each part is attached to the base 3 and is adjustable relatively thereto, independently of the other part by adjusting screws 9. 5
Alternatively as shown in Fig. 5 the rear part 15 of the sole plate may have a forward extension 16 which is inclined upwardly and the front part 17 of the sole plate be slidingly mounted on this forward and upward extension 16 and be adjusted thereon by an adjusting screw 18. 10

The cutter comprises a boss 6 with a plurality of radial cutting edges thereon. The cutting edges are disposed horizontally and vertically and are conveniently formed on blades 7 secured in slots in the boss 6. The blades 7 are removable for ease in sharpening and may be adjustably mounted in the slots. 15
The blades may have tungsten carbide tipped cutting edges for use on hard material. The blades 7 are made of suitable material and may be of pressed steel. 20

A suitable lay 19 on a pillar 20 is provided on the sole plate 8 to regulate the depth of rebates cut by the plane and a lay is provided on the base to regulate the width of rebates. 25
A router plane such as described requires little effort to use having a motor driven cutter and can be used for cutting rebates or for surfacing material. 30

WHAT WE CLAIM IS:—

1. A router plane comprising a base, on which a motor is mounted, or is adapted to have a motor fixed thereto a cutter on the motor spindle, a sole plate disposed under the base, an opening in the sole plate in which the cutter is located, the sole plate being attached to the base so that it can be adjusted relatively thereto to regulate the depth of cut. 35

2. A router plane according to claim 1 in which the motor is mounted on the base with its spindle substantially at right angles to the 40

base and is held on a seat on the base by a set screw in the end of an arm on the base engaging with the end of the motor. 45

3. A router plane according to claim 1 or 2 in which the sole plate is attached to the base by screws engaging in holes in the sole plate which is held rigid with the base by set screws in the latter engaging with the upper side of the sole plate. 50

4. A router plane according to claim 1 or 2 in which the sole plate is formed in two parts located one on each side of the cutter and each part of the sole plate is attached to the base by means which permit of it being adjusted relatively to the base to regulate the depth of cut. 55

5. A router plane according to claim 4 in which each part of the sole plate is attached to the base by screws and is held rigid with the base by set screws in the base engaging with the upper surfaces of the respective parts of the sole plate. 60

6. A router plane according to claim 4 in which the base has an upwardly inclined forward extension and the front part of the sole plate is slidingly mounted thereon and is adjusted relatively thereto by a screw. 65

7. A router plane, according to any one of the preceding claims 1 to 6 in which the cutter comprises a boss having radially disposed cutting blades detachably mounted therein. 70

8. A router plane according to any one of the preceding claims 1 to 7 having adjustable lays on the base for limiting the depth and width of rebates. 75

9. A router plane substantially as herein described and illustrated in the accompanying drawings. 80

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